FIREFIGHTER II MOD A
Fire Hose and Appliances

2-7 FIRE HOSE AND APPLIANCES

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- **2-7.2** Identify the types of fire hose. (*3-3.7, 3-3.9*)
- **2-7.3** Identify the types of fire hose damages and their prevention (*3-5.4*)
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- **2-7.17.6** Down an outside stairway to a lower floor
- **2-7.17.7** To an upper floor by hoisting

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- **2-7.18.2** Up a ladder to a second floor landing
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- **2-7.18.6** Down an outside stairway to a lower floor
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- **2-7.25.1 Hose coupling: Foot tilt method**
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- **2-7.26.3 Hose drag/carry**

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- **2-7.27.1 Accordion load**
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- **2-7.27.3 Flat load**
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- **2-7.27.5 Straight finish**
- **2-7.27.6 Minuteman load**
- **2-7.27.7 Triple layer load**

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- **2-7.28.1 Pulling a non-pre-connected wyed hose**
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- **2-7.28.4 Pulling a pre-connected hoseline triple layer loaded**

2-7.29 **Demonstrate the procedures for lengthening a line using a hose clamp, given fire hose used for water supply (minimum 2½ inches). (*3-3.9(b), 3-3.12(b), 3-3.14(b))***

2-7.30 **Demonstrate the procedures for lengthening a line using a break-apart nozzle, given fire hose used for fire attack (2½ inches minimum). (*3-3.9(b), 3-3.12(b), 3-3.14(b*))**

2-7.31 **Demonstrate the procedures for replacing a section of hose using the kink OR clamp method, given a fire hose used for fire attack (minimum 1½ inches): (*3-3.9(b), 3-3.12(b), 3-3.14(b*))**
- **2-7.31.1 Kink Method**
- **2-7.31.2 Clamp Method**

2-7.32 **Demonstrate the use of hose appliances and tools on a pumper as required to be carried by Section 7-2, NFPA 1901, Standard for Pumper Fire Apparatus. (*3-3.3(b*))**

2-7.33 **Demonstrate advancing uncharged attack lines of two different sizes (1½ inches or larger), from a pumper given the necessary equipment and operating as a member of a team for the following evolutions: (*3-3.9(b), 3-3.12(b*))**
- **2-7.33.1 Into a structure**
- **2-7.33.2 Up a ladder to a second floor landing**
- **2-7.33.3 Up an inside stairway to an upper floor**
- **2-7.33.4 Up an outside stairway to an upper floor**
- **2-7.33.5 Down an inside stairway to a lower floor**
- **2-7.33.6 Down an outside stairway to a lower floor**
- **2-7.33.7 To an upper floor by hoisting**

2-7.34 **Demonstrate advancing charged attack lines of two different sizes (1½ inches or larger) from a pumper given the necessary equipment and operating as a member of a team for the following evolutions: (*3-3.9(b*))**
- **2-7.34.1 Into a structure**
- **2-7.34.2 Up a ladder to a second floor landing**
- **2-7.34.3 Up an inside stairway to an upper floor**
- **2-7.34.4 Up an outside stairway to an upper floor**
- **2-7.34.5 Down an inside stairway to a lower floor**
- **2-7.34.6 Down an outside stairway to a lower floor**
- **2-7.34.7 To an upper floor by hoisting**

2-7.35 **Demonstrate operation of a charged attack line (1½ inches or larger) from a ground ladder. (*3-3.9(b))***

2-7.36 **Demonstrate carrying a 100-foot attack line (1½ inches or larger) into a building, connecting it to a standpipe, and advancing the line from the standpipe. (*3-3.12(b*)**

2-7.37 **Demonstrate the proper procedure for making hydrant connections with the following type intake hose: (*3-3.14(b)*)**
- **2-7.37.1 3 inch or smaller intake line**
- **2-7.37.2 4½ inch or larger soft sleeve**
- **2-7.37.3 4½ inch or larger hard intake line**

2-7.38 **Demonstrate a hand lay of 300 feet of supply line (2½ inch or larger) from a pumper to a water source. (*3-3.14(b*))**

2-7.39 **Demonstrate the procedure for cleaning and maintaining fire hose. (*3-5.4(b*))**

2-7.40 **Demonstrate the procedures for cleaning and maintaining couplings. (*3-5.4(b*))**

2-7.41 Demonstrate the procedures for inspecting couplings for damage. (*3-5.4(b)*)

REFERENCES:

IFSTA, Essentials, 4th ed., Chapter 12
Delmar, Firefighter's Handbook, copyright 2000,Chapter 10
Jones & Bartlett, Fundamentals of Fire Fighter Skills, 1st ed., Chapter 16

2-7 Fire Hose and Appliances

I. Identify the construction features of hose. **2-7.1** (*3-3.7, 3-3.9*)

A. Material from which it is made:

1. Cotton
2. Nylon
3. Rayon vinyl
4. Poly-mired vinyl
5. Polyester

B. Construction methods

1. Braided
2. Wrapped
3. Woven jacket
4. Poly-mired covered

II. Identify the types of fire hose. **2-7.2** (*3-3.7, 3-3.9*)

A. Booster

1. Braided
2. ¾ inch and 1 inch

B. Attack

1. Woven-jacket or poly-mired covered
2. 1½ inch to 3 inch

C. Supply and Relay

1. Woven-jacket or poly-mired covered
2. 2½ inch to 5 inch

D. Intake

1. Woven-jacket, poly-mired or wrapped
2. Hard suction and soft suction
3. 2½ inch to 6 inch
4. Also known as soft- or hard-sleeve

III. Identify the types of fire hose damages and their prevention. **2-7.3** (*3-5.4*)

A. Mechanical damage

1. Examples

a. Worn places
b. Rips
c. Abrasions
d. Cracked inner linings
e. Crushed or damaged couplings

2. Prevention

a. Avoid laying or pulling over sharp corners
b. Provide warning devices in traffic lanes.
c. Prevent vehicles from running over
d. Close nozzles slowly
e. Change position of bends in hose when reloading
f. Provide chafing blocks
g. Avoid excessive pump pressure on hose lines

B. Thermal damage

1. Examples

a. Charring
b. Melting
c. Drying of the rubber lining.

2. Prevention

a. Protect hose from excessive heat or fire.
b. Do not allow hose to remain in heated area after drying.
c. Use moderate temperature for drying.
d. Keep the outside jacket dry.
e. Run water through hose that has not been used for some time to prolong life.
f. Avoid drying hose on hot pavement.
g. Prevent hose from coming in contact with or close to vehicle exhaust systems.
h. Use hose bed covers to shield hose from sun.

C. Mildew and mold (woven jacket hose)

1. Examples

a. Decay
b. Deterioration

2. Prevention

a. All wet hose should be removed from the apparatus, replaced and dried.
b. Hose should be removed, inspected, swept and reloaded if not used every 30 days.
c. Exercise hose every 30 days
d. Run water through it every 90 days.

D. Chemical damage

1. Examples

a. Exposure to petroleum products
b. Exposure to run off
c. Exposure to acids/alkali's

2. Prevention

a. Thoroughly scrub all traces of acid contacts with baking soda and water.
b. Periodically remove hose from the apparatus, wash it, and run water through it.
c. Properly test hose if any suspicion of damage.
d. Avoid laying hose in the gutter.
e. Properly dispose of hose that has been exposed to hazardous materials and cannot be decontaminated.

IV. Identify the construction features of fire hose couplings. **2-7.4** (*3-5.4*)

A. Materials

1. Brass alloy
2. Aluminum alloy
3. Magnesium

B. Types

1. Threaded
2. Storz-type
3. Others

a) Quarter turn
b) Oil field rocker jug
c) Snap or Jones

C. Manufacture technique

1. Drop-forged: hardest
2. Extruded: somewhat weaker than drop-forged
3. Cast: weakest

D. Threaded

1. Three-piece
2. Five-piece

a. The difference between is Five-piece has reducers.

3. Parts

a. Shank

1) Also called tailpiece, bowl or shell
2) Male has rocker lugs or pins

b. Swivel

1) Contains female threads
2) Permits coupling without turning hose
3) Rockers/lugs/pins

c. Higbee cut and indicator

1) On both couplings
2) Special type thread designed to provide a positive connection between couplings.
3) Indicator is a shallow indentation of one of the lugs

d. Lugs

1) Pin
2) Rocker
3) Recessed

E. Storz-type

1. Referred to as "sexless" (no distinct male or female couplings)
2. Can be coupled with a 1/3 turn
3. Locking components

a. Grooved lugs
b. Insert rings built into the swivel

V. Identify the uses of hose rolls. **2-7.5** (*3-3.7, 3-5.4*)

A. Straight

1. Placed in storage
2. Returned to quarters for washing
3. Loaded back on the apparatus

B. Donut roll

1. Situations when it is going to be deployed directly from a roll for use.
2. Used when both ends need to be together.

C. Twin donut roll

1. Used for a compact roll which may be transported and used for high-rise operations

D. Self-locking twin donut

1. Same as twin donut, only a carrying strap is formed.

VI. Identify the difference between a forward and reverse hose lay. **2-7.6** (*3-5.4*)

A. Forward hose lay

1. From the water source to the scene
2. Hose bed set up with female coupling coming off first.

B. Reverse hose lay

1. From the scene to the water source
2. Hose bed set up with male coupling coming off first

VII. Identify precautions to be followed while advancing hose lines to a fire. **2-7.7** (*3-3.9*)

A. All firefighters on same side of hose
B. Check door, for heat, before opening/entering
C. Bleed off air and check pattern before entering
D. Stay low
E. Avoid blocking ventilation openings such as doors and windows.

VIII. Loading guidelines

A. Check the gaskets and swivel before connecting any coupling.
B. When two sections are connected, keep the flat sides of the hose on the same plane.
C. Hand tighten all connections
D. When the hose must be bent, smooth the inside of the bend.
E. Avoid loading hose so the coupling has to "turn". Use a "dutchman" to prevent it.
F. For large diameter hose, load all couplings in the front of the bed.
G. Do not pack the hose too tightly.

IX. Identify three (3) types of hose rolls **2-7.8** (*3-3.7, 3-5.4)*

A. Straight roll **2-7.8.1**

1. Lay the hose out straight and flat on a clean surface.
2. Roll the male coupling over onto the hose to start the roll.
3. Form a coil that is open enough to allow the fingers to be inserted.
4. Continue to roll the coupling over onto the hose, forming an even roll.
5. As the roll increases in size, keep it's edge aligned on the remaining hose to make a uniform roll.
6. Lay the completed roll flat on the ground.
7. Using a foot, tamp any protruding coils down into the roll.

B. Donut roll **2-7.8.2**

1. Method One

   a. Lay the section of hose flat and in a straight line.
   b. Start the roll from a point 5 or 6 feet off center towards the male coupling.
   c. Roll towards the female end.
   d. Leave sufficient space at the center loop to insert the hand for carrying.
   e. Near the completion of the roll, the male coupling is enclosed within the roll as the hose is rolled over it.
   f. Check to make sure the male coupling is inside the roll with the female coupling about 3 feet ahead of it.

2. Method Two

   a. Grasp coupling and carry it to other end.
   b. Check to make sure the looped section is laying flat, straight, and without twists.
   c. Face coupling ends and start rolling 2½ feet from bend towards the male coupling.
   d. Pull female side back to relieve tension.
   e. As roll approaches the male coupling, lay the roll flat on the ground and bring the female end around the male coupling to complete the roll.

C. Twin Donut Roll **2-7.8.3**

1. Place the male and female couplings together.
2. Lay the hose flat, without twisting, to form two parallel lines from the loop end to the couplings.
3. Fold the loop end over and upon the two lines to start the roll.
4. Continue to roll both lines simultaneously towards the coupling ends, forming a twin roll with a decreased diameter.

D. Self-Locking Twin Donut Roll **2-7.8.4**

1. Place the male and female couplings together.
2. Lay the hose flat, without twisting, to form parallel lines from the loop end to the couplings.
3. Move one side of the hose up and over 2½ to 3 feet to the opposite side without turning.
4 Adjust the size of this shoulder loop to the proper length for carrying.

5. Facing the coupling ends, bring the back side of the loop forward toward the couplings, and place it on top of where the hose crosses forming a loop on each side without twist.
6. Start rolling towards the coupling ends, forming two rolls side by side.
7. When the rolls are completed, allow the couplings to lie across the top of each roll, and adjust the loops, one short and one long, by pulling only one side of the loop through.
8. Place the long loop through the short loop, just behind the couplings, and tighten snugly forming a shoulder sling.

X. Identify different types of coupling and uncoupling procedures. **2-7.9** *(3-3.9, 3-3.12, 3-3.14)*

A. Coupling Hose

1. Foot Tilt Method (one firefighter) **2-7.9.1**

   a. Stand facing the two couplings so that one foot is near the male end.
   b. Place the foot directly on the hose behind the male coupling and apply pressure to tilt it upward.
   c. Position feet apart for balance.
   d. Grasp the female end by placing one hand behind the coupling and the other hand on the coupling swivel.
   e. Bring the two couplings together and turn the swivel clockwise with the thumb to make the connection.

B. Two Firefighter Method

1. Male Coupling **2-7.9.2**

   a. While facing the assistant, grasp the male coupling with both hands.
   b. Bend the hose directly behind the coupling.
   c. Hold the coupling and hose tightly against the upper thigh or midsection, with the male threads outward.
   d. Look in another direction while assistant aligns couplings and tightens them.

2. Female Coupling **2-7.9.2**

   a. Grasp the female coupling with both hands.
   b. Bring both couplings together.
   c. Align them using the Higbee indicator or other methods(s).

d. Turn the female coupling counterclockwise until a click is heard.
e. Turn the female coupling clockwise until tightened.

C. Hose Uncoupling

1. Knee Press Method **2-7.9.3**

a. Grasp the hose behind the female coupling.
b. Stand the male coupling on end.
c. Set feet well apart for balance.
d. Place on knee upon the hose and shank of the female coupling.
e. Snap the swivel quickly in a counterclockwise direction as body weight is applied to loosen the connection.

2. Two Firefighter Stiff Arm Method **2-7.9.4**

a. Take a firm two-handed grip on your respective coupling and press the coupling toward the other firefighter, thereby compressing the gasket in the coupling.
b. Keep arms stiff, and use the weight of both bodies to turn each hose coupling counterclockwise, thus loosening the connection.

XI. Identify different types of hose carries. **2-7.10** *(3-3.9, 3-3.12, 3-3.14)*

A. Hose Carry :Shoulder Loads (from Flat or Horseshoe) **2-7.10.1**

1. Attach nozzle to end of hose.
2. Position carrier at tailboard facing in the direction of travel.
3. Place the initial fold of hose over the carrier's shoulder so that the nozzle can be carried chest high.
4. Bring the hose from behind over the shoulder so the rear fold ends at the back of the knee.
5. Complete the above procedure for each carrier until the desired length of hose is loaded.
6. Uncouple the hose from the hose bed when desired length is loaded.
7. Hand the coupling to the last carrier.

B. Hose Carry: Shoulder Loads (from Flat or Accordion) **2-7.10.1**

1. Facing the hose bed, grasp the nozzle and the number of folds needed to make the desired length.
2. Pull the folds about one-third of the way out of the bed.

3. Twist the folds into an upright position.
4. Turn and pivot into the folds placing them on top of the shoulder.
5. Make sure the hose is flat with the nozzle and/or coupling in front of the body.

C. Hose Carry/Drag **2-7.10.2**

1. Stands alongside the hoseline and picks up the nozzle or coupling.
2. Places the hoseline over his/her shoulder with the coupling (nozzle) in front, resting on his/her chest.
3. Holds the coupling in place while pulling with his/her shoulder, arms and legs dragging hose to desired location.

D. Hose Drag/Carry **2-7.10.3**

1. Stands alongside the hoseline and picks up the nozzle or coupling.
2. Walks approximately 25 feet.
3. Places the hoseline over his/her shoulder with the coupling (nozzle) in front, resting on his/her chest.
4. Walks approximately 25 feet.
5. Pick up hose with other hand.
6. Holds the coupling in place while pulling with his/her shoulder, arms and legs dragging hose to desired location.

XII. Identify different types of loading hose loads or finishes. **2-7.11** *(3-3.9, 3-3.12, 3-3.14)*

A. Accordion Load **2-7.11.1**

1. Lay the first length of hose in the bed on edge against the partition with the coupling at the rear of the bed.
2. At the front of the hose bed, fold the hose back on itself, and lay it back to the rear next to the first length.
3. At the rear of the hose bed, fold the hose so that the bend I s even with the rear edge of the bed, and then lay the hose back to the front.
4. Continue laying the hose folds across the hose bed staggering the folds so that every other bend is approximately two inches shorter than the edge of the bed.
5. When another tier must be started, angle the hose upward to the front of the bed.

B. Horseshoe Load **2-7.11.2**

1. Place the female coupling in a front corner of the hose bed with the hose on edge and against the wall.
2. Make a fold at the rear even with the edge of the hose bed.
3. Lay the hose to the front and then around the perimeter of the bed so that it comes back to the rear along the opposite side.
4. Make a fold at the rear in the same manner as Step 2.
5. Lay the hose back around the perimeter of the hose bed inside the first length of hose.
6. Lay succeeding lengths progressively inward towards the center until the entire space is filled.
7. Stagger the folds so that every other bend is approximately two inches inside adjacent bends.
8. Start the second tier by extending the hose from the last fold directly over the front corner of the bed, laying it flat on the hose from the first tier.

C. Flat Load **2-7.11.3**

1. Lay the first length of hose flat in the bed against the partition with the coupling to the rear of the hose bed.
2. Fold the hose back on itself at the front of the hose bed and lay it back to the rear of the bed on top of the previous length.
3. At the rear of the hose bed, fold the hose to that the bend is even with the rear edge of the bed.
4. Lays the hose back to the front of the bed, angling it to make the front fold adjacent to the previous fold.
5. Continue to la the hose in folds progressively across the bed to complete the first tier.
6. Continue with the second tier the same as the first.
7. Make the fold son the second tier approximately two inches shorter than the folds on the first tier.
8. Alternate the tiers the same as the first and second for all successive tiers.

D. Reverse Horseshoe Load **2-7.11.4**

1. Connect the wye to the end of the supply hose at the rear of the bed.
2. Place the wye in the center of the bed with the two male openings toward the rear.
3. Connect one 1½ inch hose to the wye.
4. Lay the hose on edge to the front of the bed and make a fold.
5. Lay the hose back to the rear alongside the first length.

6. Form a "U" at the edge of the bed, return the hose to the front of the bed, and make a fold.
7. Lay the hose back inside the previously laid length in the same manner as before.
8. Continue as above until entire length of hose is loaded.
9. Wrap the male end of the hose once around the horseshoe loops.
10. Form a small loop by bringing the end back under the center of the loops and over the top.
11. Attach the nozzles and place it inside the small loop.
12. Pull the remaining slack hose back into the horseshoe to tighten the loop against the nozzle.
13. Load the second length of hose the same as the first.

E. Straight Finish **2-7.11.5**

1. Loosely flake the last two or three sections of hose back and forth across the hose bed on top of the hose load.
2. Attach any appliances or tools necessary to the hose.

F. Minuteman Load **2-7.11.6**

1. Connect first section to the discharge only.
2. Lay the hose flat in the bed to the front, with the remaining hose laid out to the front of the bed to be loaded later. (If the discharge is in the front, the hose is first laid to the rear and then back to the front.)
3. Couple remaining hose together and attach nozzle.
4. Place the nozzle on top of the first length at the rear.
5. Angle the hose to the opposite side of the bed.
6. Make a fold and lay the hose back to the rear.
7. Make a fold at the rear of the bed and angle the hose to the other side to the front of the bed.
8. Make a fold at the front and continue loading the hose in this manner.
9. Continue until all hose is loaded.
10. Connect the male coupling of the first length to the female coupling of the last section and lay the remained of the hose from the first section in the bed, as before.

G. Triple Layer Load **2-7.11.7**

1. Connect the female coupling to the discharge.
2. Extend the hose out in a straight line.
3. Pick up the hose at a point two-thirds of the distance from the bed and carry it to the bed, laying the hose such that three layers are formed.

4. Using several people, pick up the entire length of the three layers.
5. Begin loading the hose by folding the hose over the three layers and into the bed.
6. Fold the layers over at the front of the bed and lay them back to the rear on top of the previously laid hose.
7. Continue loading the hose in this "S" fashion until the entire length is loaded.

XIII. Identify different types of unloading hose loads or finishes. **2-7.12** *(3-3.9, 3-3.12, 3-3.14)*

A. Pulling a non-pre-connected wyed hose **2-7.12.1**

1. Grasp the nozzle and small loop of one bundle and pull it from the hose bed.
2. Lay the bundle on the ground when it clears the tailboard of the apparatus.
3. Pull the opposite bundle the same way.
4. Pull the wye and attached hose from the hose bed and lay it on the ground near the ties.
5. Place arm through the horseshoe loops of one bundle and lay off one loop at a time to the desired location.
6. Repeat the process for the other bundle.

B. Pulling a pre-connected hoseline flat loaded **2-7.12.2**

1. Put one arm through the longer loop and grasp the shorter loop with the same hand.
2. Grasp the nozzle with the hand NOT used to grasp the loops.
3. Pull load from the bed using the pull loops.
4. Walk toward the fire.
5. When the hose pulls taut, release the hand loop.
6. Continue to walk toward the fire.
7. When the shoulder loop becomes taut, drop it to the ground.
8. Proceed towards the fire until the hose is fully extended.

C. Pulling a pre-connected hoseline minuteman loaded**. 2-7.12.3**

1. Grasp the nozzle and bottom loops (if provided)
2. Pull the load approximately 1/3 out of the hose bed.
3. Face away from the apparatus and place the hose load on your shoulder with the nozzle against the stomach.
4. Walk away from the apparatus, pulling the hose out of the bed by the bottom loop.
5. Permit the load to play off from the top while walking towards the fire scene.
6. Drop any remaining hose on the ground when desired location is reached.

D. Pulling a pre-connected hoseline triple layer loaded. **2-7.12.4**

1. Place the nozzle and fold of the first tier over the shoulder while facing in the direction of travel.
2. Walk away from the apparatus, pulling the hose completely off the bed.
3. When the hose bed is cleared, drop the folded end from the shoulder.
4. Continue to advance the nozzle towards the desired location.

XIV. Identify the procedures for lengthening a hose line using a hose clamp. **2-7.13** *(3-3.9, 3-3.12, 3-3.14)*

A. Bring additional sections of hose to the nozzle end of the hoseline.
B. Crack the nozzle open slightly.
C. Apply the hose clamp about three (3) feet behind the nozzle.
D. Remove nozzle
E. Attach new section(s) of hose
F. Reattach nozzle
G. Slowly release the clamp allowing water to flow to nozzle.

XV. Identify the procedures for lengthening a hose line using a break apart nozzle. **2-7.14** *(3-3.9, 3-3.12, 3-3.14)*

A. Bring additional hose to the nozzle end of the hoseline.
B. Remove the tips ahead of the nozzle with the nozzle in the OFF position.
C. Attach hose and another nozzle.
D. Slowly open break-apart nozzle.

XVI. Identify the procedure for replacing a section of hose using: **2-7.15** *(3-3.9, 3-3.12, 3-3.14)*

A. Using the kink method **2-17.15.1**

1. Obtain sufficient slack in the hoseline to form a loop
2. Bend the hose over itself.
3. Apply body weight to the bends in the hose, while placing one knee directly upon one of the bends.
4. Have someone else replace the section with two sections of hose.
5. Slowly release the pressure on the bend.

B. Using a hose clamp **2-17.15.2**

1. Apply a hose clamp approximately three (3) feet behind the couplings.
2. Replace burst section of hose with two good sections of hose.
3. Release the hose clamp.

XVII. Identify the use of hose and appliances on a pumper as required to be carried by NFPA1901, Standard for Pumper Fire Apparatus, Section 7-2. **2-17.16** *(3-3.3)*

A. Use of appliances and tools

1. Definitions:

a. **Appliance**: A device, other than a coupling, that is used with hose and through which water must pass.

b. **Tool**: A device that makes the handling of hose and appliances easier. Some devices help protect hose against unnecessary wear and damage.

2. Appliance

a. Valve

1) Ball
2) Gate
3) Butterfly
4) Clapper

b. Wye
c. Siamese
d. Water thief

e. Hydrant valve
f. Fitting

1) Adapter
2) Reducer
3) Double

a) Male
b) Female

g. Strainer

3. Tools

a. Hoist
b. Jacket
c. Clamp
d. Spanner, hydrant wrench mallet
e. Bridge
f. Chaffing block
g. Strap, rope, drain

XVIII. Identify the procedures for advancing uncharged attack lines from a pumper. **2-7.17** *(3-3.9, 3-3.12)*

A. Advance of uncharged hoselines

1. Into a structure **2-7.17.1**

a. Select a hoseline, properly remove it from the apparatus and deploy it toward the entrance
b. The nozzle person and back up firefighters are on the same side of the hoseline
c. The nozzle person is at the nozzle and the officer or second firefighter is a few feet back; if available, the next firefighter is approximately at midpoint of the first section and the coupling
d. Feel the door for heat. This can give an indication of extreme heat buildup, signifying the potential for a backdraft or flashover.

CAUTION: An uncharged hoseline should never be advanced into a fire or through a door that is hot to touch. The line should be charged and the nozzle person should open the nozzle, bleed the air off, and select the proper pattern before entering the fire area.

e. Stay low and avoid blocking ventilation openings such as doorways or stairs.

2. Up a ladder to second floor landing **2-7.17.2**

   a. Select a hoseline, properly remove it from the apparatus, and deploy it to the base of the ladder.
   b. If carrying a shoulder load, lay it at the left side of the ladder
   c. The nozzle person takes the nozzle and pulls it under the left armpit, across the chest and over the right shoulder, allowing the nozzle to rest in the small of the back
   d. The nozzle person, with both hands free, climbs the ladder to the second floor landing
   e. As the nozzle person steps off the ladder onto the building, the second firefighter drapes a large loop of hose over his/her shoulder and starts up the ladder to help advance the hose.
   f. The above process continues until an adequate amount of hose has been advanced

3. Up an inside stairway to an upper floor **2-7.17.3**

   a. Select a hoseline, properly remove it from the apparatus, and deploy it to the base of the inside stairway.
   b. Advance up the stairway feeding the hose off of a shoulder carry (if used)
   c. Lay the hose on the stairs against the outside wall to avoid sharp kinks and bends
   d. *(OPTIONAL) If there is an open stairwell, the hoseline may be run up between the handrails. It should be done in a vertical manner and tied off with a hose tool or strap at the upper level near a coupling*
   e. Once the desired landing is reached, the excess hose can be flaked up the stairs toward the floor, above the fire and looped back down. *(Caution must be used when placing firefighters above the fire floor when hose line is uncharged.)*
   f. When the hoseline is in place, the nozzle person has the line charged, bleeds the nozzle, and prepares to advance the line.
   g. If possible, firefighters should be placed at every turn or point of resistance to assist in deployment.

3. Up an outside stairway to an upper floor **2-7.17.4**

   a. Select a hoseline, properly remove it from the apparatus, and deploy it to the base of the outside stairway
   b. Advance up the stairway, feeding the hose off of a shoulder carry, if used
   c. Lay the hose on the stairs, avoiding sharp kinks and bends
   d. Once the desired landing is reached, the excess hose can be flaked up the stairs toward the floor above the fire and looped back down. (*Caution must be used when placing firefighters above the fire floor when hose line is uncharged.*)
   e. When the hoseline is in place, the nozzle person has the line charged, bleeds the nozzle, and prepares to advance the line.
   f. If possible, firefighter should be placed at every turn or point of resistance to assist in deployment.

4. Down an inside stairway to a lower floor **2-7.17.5**

(Caution: Recommended for use only when you know there is no fire present or you know the location of a very small fire.)

   a. Select a hoseline, properly remove it from the apparatus, and deploy it to the base of the inside stairway.
   b. Advance down the stairway, feeding the hose off a shoulder carry (if needed)
   c. Lay the hose on the stairs against the outside wall to avoid sharp kinks and bends
   d. Have all available hose in place when reaching the fire floor
   e. When the hoseline is in place, the nozzle person has the line charged, bleeds the nozzle, and prepares to advance the line.
   f. If possible, firefighters should be placed at every turn or point of resistance to assist in deployment

5. Down an outside stairway to a lower floor **2-7.17.6**

(Caution: Recommended for use only when you know there is no fire present or you know the location of a very small fire.)

   a. Select a hoseline, properly remove it from the apparatus , and deploy it to the outside staircase.
   b. Advance down the stairway, feeding the hose off of a shoulder carry (if used)
   c. Lay the hose on the stairs avoiding sharp kinks and bends
   d. Have all available hose in place when reaching the fire floor
   e. When the hoseline is in place, the nozzle person has the line charged, bleeds the nozzle, and prepares to advance the line.
   f. If possible, firefighters should be placed at every turn or point of resistance to assist in deployment

6. To an upper floor by hoisting **2-7.17.7**

   a. Select a hoseline, properly remove it from the apparatus, and deploy it to the area it is to be hoisted.
   b. Lower a rope of appropriate length from the intended destination
   c. If available, have a hose roller in place, over the windowsill or edge of wall, and properly secured.
   d. Fold the nozzle end of the hoseline back over the rest of the hose until an overlap of four (4) to five (5) feet is formed
   e. Tie a clove hitch, with an overhand safety knot, around the tip of the nozzle and the hose it is folded against, so that they are lashed together
   f. Place a half hitch on the doubled hose about twelve (12) inches from the loop end
   g. When the hoseline is in place, the nozzle person has the line charged, bleeds the nozzle, and prepares to advance the line.

XIX**.** Identify the procedures for advancing charged attack lines of two different sizes (1½ or larger), from a pumper, given the necessary equipment and operating as a member of a team for the following evolutions: **2-7.18** (*3-3.9(b), 3-3.12(b*))

A. Advancement of charged hoselines

1. Into a structure **2-7.18.1**

a. Select a hoseline, properly remove it from the apparatus, and deploy it toward the entrance
b. The nozzle person and back up firefighters are on the same side of the hoseline
c. The nozzle person is at the nozzle and the officer or second firefighter is a few feet back; if available, the next firefighter is approximately at the midpoint of the first section and the coupling
d. When the hoseline is in place, the nozzle person has the line charged, bleeds the nozzle and prepares to advance the line
e. Feel the door for heat. This can give an indication of extreme heat buildup signifying the potential for a backdraft or flashover.
f. If possible, firefighters should be placed at every turn or point of resistance to assist in deployment

2. Up a ladder to a second floor landing **2-7.18.2**

(Caution: Charged hoselines should only be advanced up a ladder when absolutely necessary.)

a. The hoseline is brought to the base of the ladder where it is charged and the nozzle is bled
b. The nozzle person and the firefighters space themselves on the ladder within reach of each other
c. Each firefighter ties into the ladder with a leg lock or ladder belt
d. Using both hands, the hoseline is pushed upward from firefighter to firefighter
e. The nozzle person advances the line into the second floor landing
f. The other firefighters continue to hoist additional hose as necessary

3. Up an inside stairway to an upper floor **2-7.18.3**

    a. Select a hoseline, properly remove it from the apparatus, and deploy it to the base of the inside stairway
    b. When the hoseline is in place, the nozzle person has the line charged, bleeds the nozzle, and prepares to advance the line
    c. Advance the hose laying it on the stairs against the outside wall to avoid sharp kinks and bends
    d. If possible, firefighters should be placed at every turn or point of resistance to assist in deployment
    e. Once desired landing is reached, the excess hose can be advanced up the stairs toward the floor above the fire and looped back down
    f. Entry is then made into the fire floor of the fire area

4. Up an outside stairway to an upper floor **2-7.18.4**

    a. Select a hoseline, properly remove it from the apparatus, and deploy it to the base of the inside stairway
    b. When the hoseline is in place, the nozzle person has the line charged, bleeds the nozzle, and prepares to advance the line
    c. Advance the hose laying it on the stairs avoiding sharp kinks or bends
    d. If possible, firefighters should be placed at every turn or point of resistance to assist in deployment
    e. Once desired landing is reached, the excess hose can be advanced up the stairs toward the floor above the fire and looped back down
    f. Entry is then made into the fire floor of the fire area

5. Down an inside stairway to a lower floor **2-7.18.5**

    a. Select a hoseline, properly remove it from the apparatus and deploy it to the inside stairway
    b. When the hoseline is in place, the nozzle person has the line charged, bleeds the nozzle, and prepares to advance the line
    c. Advance the hose, laying it on the stairs against the outside wall to avoid sharp kinks and bends
    d. If possible, firefighters should be placed at every turn or point of resistance to assist in deployment
    e. Once the desired landing is reached, it is necessary to have all available hose on the fire floor

f. Entry is then quickly made in the fire floor or fire area
g. Expect to encounter heavy heat conditions while advancing lines down inside stairways

6. Down an outside stairway to a lower floor **2-7.18.6**

a. Select a hoseline, properly remove it from the apparatus, and deploy it to the outside stairway
b. When the hoseline is in place, the nozzle person has the line charged, bleeds the nozzle, and prepares to advance the line
c. Advance the hose laying it on the stairs avoiding sharp kinks and bends
d. If possible, firefighters should be placed at every turn or point of resistance to assist in deployment
e. Once the desired landing is reached, it is necessary to have all available hose on the fire floor
f. Entry is then quickly made into the fire floor or fire area

7. To an upper floor by hoisting **2-7.18.7**

a. Select a hoseline, properly remove it from the apparatus, and deploy it to the area it is to be hoisted
b. Lower a rope of appropriate size from the intended destination of the hoseline
c. When the hoseline is in place, the line is charged and the nozzle is bled
d. Tie a clove hitch, with an overhand safety knot, around the hose about one (1) foot below the coupling and the nozzle
e. Tie a half hitch through the nozzle handle and around the nozzle itself in a manner that allows the rope to hold the nozzle shut while it is being hoisted
f. When the hoseline is in place, the nozzle person advances the line

XX Identify the procedure for operating of a charged attack line from a ground ladder**.** **2-7.19** (*3-3.9(b)*)

(Caution: Operating a hoseline from a ground ladder requires the ladder to be securely tied in and heeled)

A. The hoseline is brought to the base of the ladder where the line is charged and the nozzle is bled.
B. The nozzle person and firefighters space themselves on the ladder within reach of each other
C. Each firefighter ties into the ladder with a leg lock or ladder belt

D. Using both hands, the hoseline is then pushed upward from firefighter to firefighter.
E. The nozzle person projects the nozzle through the ladder rungs allowing approximately one (1) foot to be extended beyond the rungs at the appropriate level, and secures the hose with a ladder belt or rope hose tool.
F. Secure the hose with a ladder belt or rope hose tool several rungs below the one the nozzle person is standing on
G. Once the hoseline, nozzle, and all firefighters are tied in and secured, the nozzle may be opened slowly

XXI. Identify the procedure for carrying a 100-foot attack line into a building, connecting it to a standpipe, and advancing the line from the standpipe. **2-7.20** *(3-3.12)*

A. Carry the appropriate 100 feet of a minimum of 1½ inch hoseline to one floor below the fire floor
B. Detach the building hoseline or remove the outlet cap
C. Check the connection for adapters (if needed) and foreign objects in the discharge
D. Connect the fire department hose to the standpipe connection. It is a good practice to connect a gated wye to the connection before the attack line is connected
E. Advance the hoseline up to the fire floor; any extra hose could be flaked up the stairs toward the floor above the fire floor. *(Caution must be used when placing firefighters above the fire floor when hose line is uncharged)*
F. When firefighters are in position to effect the attack, the line is charged and the nozzle is bled
G. Check the door with the back of an ungloved hand. If appropriate, open the door slowly and advance the line toward the fire.

XXII: Identify the proper procedure for making hydrant connections with the following type intake hose: **2-7.21** (*3-3.14*)

A. 3 inch or smaller intake line **2-7.21.1**

1. Remove intake hose(s), hydrant wrench and other required tools from the pumper.
2. Unroll the hose
3. Connect the hose(s) to the pumper.
4. Place the hydrant wrench on the hydrant valve stem operating nut with the handle pointing away from the outlets.
5. Remove the appropriate cap(s).
6. Fully open and close the hydrant to make sure there is water and nothing is blocking the discharge(s).
7. Connect the hose(s) to the hydrant, using any adapters necessary.
8. Fully open the hydrant.
9. Tighten any connection(s) that leak.

B. 4½ inch or larger soft sleeve. **2-7.21.2**

1. Remove intake hose, hydrant wrench and other required tools from the pumper.
2. Unroll the hose
3. Connect the hose to the pumper.
4. Place the hydrant wrench on the hydrant valve stem operating nut with the handle pointing away from the outlet.
5. Remove the appropriate cap.
6. Open and close the hydrant to make sure there is water and nothing is blocking the discharge.
7. Connect the hose to the hydrant, using any adapters that may be necessary.
8. Fully open the hydrant.
9. Tighten any connection(s) that leak.

C 4½ inch or larger hard intake line **2-7.21.3**

1. Firefighter #1

    a. Check to see booster tank valve is closed.
    b. Remove the pump intake cap.
    c. Assist with the removal of the hard suction from the pumper.
    d. Assist with the connection of the hard suction to the pumper.

e. Assist with the connection of the hard suction to the hydrant.
f. Fully open the hydrant.
g. Tighten any connections that are leaking.

Note: Steps f and g can be reversed depending on local policy.

2. Firefighter #2

a. Remove the hydrant wrench and adapter (if necessary) from the pumper.
b. Remove the hydrant outlet cap.
c. Place the hydrant wrench on the hydrant valve stem operating nut with the handle pointing away from the outlet.
d. Open and close the hydrant to make sure there is water and nothing is blocking the discharge.
e. Place the adapter on the 4½inch outlet, if necessary.
f. Assist with the removal of the hard suction from the pumper.
g. Assist with the connection of the hard suction to the pumper.
h. Assist with the connection of the hard suction to the hydrant.

Note: Steps g and h can be reversed depending on local policy.

XXIII: Identify the procedure to hand lay of 300 feet of supply line (2½ inch or larger) from a pumper to a water source. **2-7.22** (*3-3.14*)

A. Hoseline drag

1. Stand alongside the hose line and pick up the nozzle or coupling.
2. Place the hose line over your shoulder with the coupling (nozzle) in front resting on the chest.
3. Hold the coupling in place while pulling with the shoulder.

B. Shoulder loads

1. Load

a. Stand with back to engine
b. Second firefighter stacks hose back and forth on shoulder with loops at waist length.
c. Maximum 100 foot per firefighter
d. Move forward 15 feet

2. Unload

    a. First to get loaded is last to unload
    b. All walk toward objective
    c. Firefighter closest to hose bed (last to get loaded) begins to flake out hose
    d. Once out of hose, next firefighter starts to drop.
    e. Repeat until at objective or run out of hose.

XXIV: Identify the procedure for cleaning and maintaining fire hose. **2-7.23** (*3-5.4*)

A. Washing hose

1. Lay the section of hose out straight.
2. Use a broom or brush to remove dust and dirt.
3. Wash and scrub with clear water.
4. If all spots have not been removed, scrub with mild soap or detergent.
5. Rinse properly and completely.
6. Dry hose if required:

    a. Hose tower
    b. Placed on an inclined rack
    c. Placed in a cabinet-type hose dryer

XXV: Identify the procedure for cleaning and maintaining couplings. **2-7.24** (*3-5.4*)

A. Clean threads to remove tar, dirt, gravel and oil.
B. Remove gasket and twist the female swivel in warm, soapy water.
C. Replace gasket:

1. Hold the gasket between your middle finger and thumb with your index finger resting on the outside of the gasket.
2. Fold the outer rim of the gasket upward by pulling with your index finger.
3. Place the gasket into the swivel by permitting the large loop of the gasket to enter the coupling swivel at the place provided for the gasket.
4. Allow the small loop to fall into place by releasing your grip on the gasket.

XXVI: Identify the procedures for inspecting couplings for damage.**2-7.25** (*3-5.4*)

A. Male

1. Check threads for damage or debris
2. File threads to remove burrs

B. Female

1. Turn swivel
2. Check threads for damage or debris

XXVII: Demonstrate three (3) types of hose rolls, given fire hose (minimum of 1½ inches) and water supply (minimum 2½ inches) used for fire attack: 2-7.26 (*3-3.7(b), 3-5.4(b)*)

A. Straight roll **2-7.26.1**

1. Lays the hose out straight and flat on a clean surface.
2. Rolls the male coupling over onto the hose to start the roll.
3. Forms a coil that is open enough to allow the fingers to be inserted.
4. Continues to roll the coupling over onto the hose, forming an even roll.
5. As the roll increases in size, keeps it's edge aligned on the remaining hose to make a uniform roll.
6. Lays the completed roll flat on the ground.
7. Using a foot, tamps any protruding coils down into the roll.

B. Donut roll **2-7.26.2**

1. Method One

a. Lays the section of hose flat and in a straight line.
b. Starts the roll from a point 5 or 6 feet off center towards the male coupling.
c. Rolls towards the female end.
d. Leaves sufficient space at the center loop to insert the hand for carrying.
e. Near the completion of the roll, the male coupling is enclosed within the roll as the hose is rolled over it.
f. Checks to make sure the male coupling is inside the roll with the female coupling about 3 feet ahead of it.

2. Method Two

    a. Grasps coupling and carry it to other end.
    b. Checks to make sure the looped section is laying flat, straight, and without twists.
    c. Faces coupling ends and start rolling 2½ feet from bend towards the male coupling.
    d. Pulls female side back to relieve tension.
    e. As roll approaches male coupling, lays flat and bring the female end around.

C. Twin Donut Roll **2-7.26.3**

1. Places the male and female couplings together.
2. Lays the hose flat, without twisting, to form two parallel lines from the loop end to the couplings.
3. Folds the loop end over and upon the two lines to start the roll.
4. Continues to roll both lines simultaneously towards the coupling ends, forming a twin roll with a decreased diameter.

D. Self-Locking Twin Donut Roll **2-7.26.4**

1. Places the male and female couplings together.
2. Lays the hose flat, without twisting, to form parallel lines from the loop end to the couplings.
3. Moves one side of the hose up and over 2½ to 3 feet to the opposite side without turning.
4 Adjusts the size of this shoulder loop to the proper length for carrying.
5. Facing the coupling ends, brings the back side of the loop forward toward the couplings, and places it on top of where the hose crosses forming a loop on each side without twist.
6. Starts rolling towards the coupling ends, forming two rolls side by side.
7. When the rolls are completed, allows the couplings to lie across the top of each roll, and adjusts the loops, one short and one long, by pulling only one side of the loop through.
8. Places the long loop through the short loop, just behind the couplings, and tightens snugly forming a shoulder sling.

XXVIII. Demonstrate one coupling and two uncoupling procedures, given a fire hose used for fire attack (minimum 1½ inches) and water supply (minimum 2½ inches): 2-7.27 (*3-3.9(b), 3-3.12(b). 3-3.14(b)*)

A. Coupling Hose

1. Foot Tilt Method (one firefighter) **2-7.27.1**

a. Stands facing the two couplings so that one foot is near the male end.
b. Places the foot directly on the hose behind the male coupling and applies pressure to tilt it upward.
c. Positions feet apart for balance.
d. Grasps the female end by placing one hand behind the coupling and the other hand on the coupling swivel.
e. Brings the two couplings together and turns the swivel clockwise with the thumb to make the connection.

B. Two Firefighter Method **2-7.27.2**

1. Male Coupling

a. While facing the assistant, grasps the male coupling with both hands.
b. Bends the hose directly behind the coupling.
c. Holds the coupling and hose tightly against the upper thigh or midsection, with the male threads outward.
d. Looks in another direction while assistant aligns couplings and tightens them.

2. Female Coupling

a. Grasps the female coupling with both hands.
b. Brings both couplings together.
c. Aligns them using the Higbee indicator or other methods(s).
d. Turns the female coupling counterclockwise until a click is heard.
e. Turns the female coupling clockwise until tightened.

B. Hose Uncoupling

1. Knee Press Method **2-7.27.3**

   a. Grasps the hose behind the female coupling.
   b. Stands the male coupling on end.
   c. Sets feet well apart for balance.
   d. Places on knee upon the hose and shank of the female coupling.
   e. Snaps the swivel quickly in a counterclockwise direction as body weight is applied to loosen the connection.

2. Two Firefighter Stiff Arm Method **2-7.27.4**

   a. Takes a firm two-handed grip on your respective coupling and presses the coupling toward the other firefighter, thereby compressing the gasket in the coupling.
   b. Keeps arms stiff, and uses the weight of both bodies to turn each hose coupling counterclockwise, thus loosening the connection.

XXIX. Demonstrate two hose carries, given fire hose used for fire attack (minimum 1½ inches) 2-7.28 (*3-3.9(b), 3-3.12(b), 3-3.14(b)*)

A. Hose Carry :Shoulder Loads (from Flat or Horseshoe) **2-7.28.1**

1. Attaches nozzle to end of hose.
2. Positions carrier at tailboard facing in the direction of travel.
3. Places the initial fold of hose over the carrier's shoulder so that the nozzle can be carried chest high.
4. Brings the hose from behind over the shoulder so the rear fold ends at the back of the knee.
5. Completes the above procedure for each carrier until the desired length of hose is loaded.
6. Uncouples the hose from the hose bed when desired length is loaded.
7. Hands the coupling to the last carrier.

B. Hose Carry: Shoulder Loads (from Flat or Accordion) **2-7.28.1**

1. Facing the hose bed, grasps the nozzle and the number of folds needed to make the desired length.
2. Pulls the folds about one-third of the way out of the bed.
3. Twists the folds into an upright position.
4. Turns and pivots into the folds placing them on top of the shoulder.
5. Makes sure the hose is flat with the nozzle and/or coupling in front of the body.

C. Hose Carry/Drag **2-7.28.2**

1. Stands alongside the hoseline and picks up the nozzle or coupling.
2. Places the hoseline over his/her shoulder with the coupling (nozzle) in front, resting on his/her chest.
3. Holds the coupling in place while pulling with his/her shoulder, arms and legs dragging hose to desired location.

D. Hose Drag/Carry **2-7.28.3**

1. Stands alongside the hoseline and picks up the nozzle or coupling.
2. Walks approximately 25 feet.
3. Places the hoseline over his/her shoulder with the coupling (nozzle) in front, resting on his/her chest.
4. Walks approximately 25 feet.
5. Picks up hose with other hand.
6. Holds the coupling in place while pulling with his/her shoulder, arms and legs dragging hose to desired location.

XXX. Demonstrate the loading of three hose loads or finishes, given fire hose used for water supply (minimum 2½ inches): 2-7.29 (*3-3.9(b), 3-3.12(b). 3-3.14(b*))

A. Accordion Load **2-7.29.1**

1. Lays the first length of hose in the bed on edge against the partition with the coupling at the rear of the bed.
2. At the front of the hose bed, folds the hose back on itself, and lays it back to the rear next to the first length.
3. At the rear of the hose bed, folds the hose so that the bend is even with the rear edge of the bed, and then lays the hose back to the front.
4. Continues laying the hose folds across the hose bed staggering the folds so that every other bend is approximately two inches shorter than the edge of the bed.
5. When another tier must be started, angles the hose upward to the front of the bed.

B. Horseshoe Load **2-7.29.2**

1. Places the female coupling in a front corner of the hose bed with the hose on edge and against the wall.
2. Makes a fold at the rear even with the edge of the hose bed.
3. Lays the hose to the front and then around the perimeter of the bed so that it comes back to the rear along the opposite side.
4. Make a fold at the rear in the same manner as Step 2.
5. Lays the hose back around the perimeter of the hose bed inside the first length of hose.
6. Lays succeeding lengths progressively inward towards the center until the entire space is filled.
7. Staggers the folds so that every other bend is approximately two inches inside adjacent bends.
8. Starts the second tier by extending the hose from the last fold directly over the front corner of the bed, laying it flat on the hose from the first tier.

C. Flat Load **2-7.29.3**

1. Lays the first length of hose flat in the bed against the partition with the coupling to the rear of the hose bed.
2. Folds the hose back on itself at the front of the hose bed and lays it back to the rear of the bed on top of the previous length.
3. At the rear of the hose bed, folds the hose to that the bend is even with the rear edge of the bed.

4. Lays the hose back to the front of the bed, angling it to make the front fold adjacent to the previous fold.
5. Continues to la the hose in folds progressively across the bed to complete the first tier.
6. Continues with the second tier the same as the first.
7. Makes the fold son the second tier approximately two inches shorter than the folds on the first tier.
8. Alternates the tiers the same as the first and second for all successive tiers.

D. Reverse Horseshoe Load **2-7.29.4**

1. Connects the wye to the end of the supply hose at the rear of the bed.
2. Places the wye in the center of the bed with the two male openings toward the rear.
3. Connects one-1½ inch hose to the wye.
4. Lays the hose on edge to the front of the bed and makes a fold.
5. Lays the hose back to the rear alongside the first length.
6. Forms a "U" at the edge of the bed, returns the hose to the front of the bed, and makes a fold.
7. Lays the hose back inside the previously laid length in the same manner as before.
8. Continues as above until entire length of hose is loaded.
9. Wraps the male end of the hose once around the horseshoe loops.
10. Forms a small loop by bringing the end back under the center of the loops and over the top.
11. Attaches the nozzles and places it inside the small loop.
12. Pulls the remaining slack hose back into the horseshoe to tighten the loop against the nozzle.
13. Loads the second length of hose the same as the first.

E. Straight Finish **2-7.29.5**

1. Loosely flakes the last two or three sections of hose back and forth across the hose bed on top of the hose load.
2. Attaches any appliances or tools necessary to the hose.

F. Minuteman Load **2-7.29.6**

1. Connects first section to the discharge only.
2. Lays the hose flat in the bed to the front, with the remaining hose laid out to the front of the bed to be loaded later. (If the discharge is in the front, the hose is first laid to the rear and then back to the front.)
3. Couples remaining hose together and attaches nozzle.

4. Places the nozzle on top of the first length at the rear.
5. Angles the hose to the opposite side of the bed.
6. Makes a fold and lay the hose back to the rear.
7. Makes a fold at the rear of the bed and angle the hose to the other side to the front of the bed.
8. Make a fold at the front and continue loading the hose in this manner.
9. Continues until all hose is loaded.
10. Connects the male coupling of the first length to the female coupling of the last section and lays the remained of the hose from the first section in the bed, as before.

G. Triple Layer Load **2-7.29.7**

1. Connects the female coupling to the discharge.
2. Extends the hose out in a straight line.
3. Picks up the hose at a point two-thirds of the distance from the bed and carries it to the bed, laying the hose such that three layers are formed.
4. Using several people, picks up the entire length of the three layers.
5. Begins loading the hose by folding the hose over the three layers and into the bed.
6. Folds the layers over at the front of the bed and lay them back to the rear on top of the previously laid hose.
7. Continues loading the hose in this "S" fashion until the entire length is loaded.

XXXI. Demonstrate the unloading of three hose loads or finishes, given fire hose used for fire attach (minimum of 1½ inches) and for water supply (minimum 2½ inches): 2-7.30 (*3-3.9(b), 3-3.12(b), 3-3.14(b)*)

A. Pulling a non-pre-connected wyed hose **2-7.30.1**

1. Grasps the nozzle and small loop of one bundle and pulls it from the hose bed.
2. Lays the bundle on the ground when it clears the tailboard of the apparatus.
3. Pulls the opposite bundle the same way.
4. Pulls the wye and attached hose from the hose bed and lays it on the ground near the ties.
5. Places arm through the horseshoe loops of one bundle and lays off one loop at a time to the desired location.
6. Repeats the process for the other bundle.

B. Pulling a pre-connected hoseline flat loaded **2-7.30.2**

1. Puts one arm through the longer loop and grasps the shorter loop with the same hand.
2. Grasps the nozzle with the hand NOT used to grasp the loops.
3. Pulls load from the bed using the pull loops.
4. Walks toward the fire.
5. When the hose pulls taut, releases the hand loop.
6. Continues to walk toward the fire.
7. When the shoulder loop becomes taut, drops it to the ground.
8. Proceeds towards the fire until the hose is fully extended.

C. Pulling a pre-connected hoseline minuteman loaded**. 2-7.30.3**

1. Grasps the nozzle and bottom loops (if provided)
2. Pulls the load approximately 1/3 out of the hose bed.
3. Faces away from the apparatus and places the hose load on his/her shoulder with the nozzle against the stomach.
4. Walks away from the apparatus, pulling the hose out of the bed by the bottom loop.
5. Permits the load to play off from the top while walking towards the fire scene.
6. Drops any remaining hose on the ground when desired location is reached.

D. Pulling a pre-connected hoseline triple layer loaded. **2-7.30.4**

1. Places the nozzle and fold of the first tier over the shoulder while facing in the direction of travel.
2. Walks away from the apparatus, pulling the hose completely off the bed.
3. When the hose bed is cleared, drops the folded end from the shoulder.
4. Continues to advance the nozzle towards the desired location.

XXXII: Demonstrate the procedures for lengthening a line using a hose clamp, given a fire hose used for water supply (minimum 2½ inches). 2-7.31 (*3-3.9(b), 3-3.12(b). 3-3.14(b))*

A. Brings additional sections of hose to the nozzle end of the hoseline.
B. Cracks the nozzle open slightly.
C. Applies the hose clamp about three (3) feet behind the nozzle.
D. Removes nozzle
E. Attaches new section(s) of hose
F. Reattaches nozzle
G. Slowly releases the clamp allowing water to flow to nozzle.

XXXIII. Demonstrate the procedures for lengthening a line using a break-apart nozzle, given fire hose used for fire attack (2½ inches minimum). 2-7.32 (*3-3.9(b), 3-3.12(b). 3-3.14(b*))

A. Brings additional hose to the nozzle end of the hoseline.
B. Removes the tips ahead of the nozzle with the nozzle in the OFF position.
C. Attaches hose and another nozzle.
D. Slowly opens break-apart nozzle.

XXXIV. Demonstrate the procedures for replacing a section of hose using the kink OR clamp method, given a fire hose used for fire attack (minimum of 1½ inches) and water supply (minimum 2½ inches). 2-17.33 (*3-3.9(b), 3-3.12(b). 3-3.14(b*))

A. Using the kink method **2-17.33.1**

1. Obtains sufficient slack in the hoseline to form a loop
2. Bends the hose over itself.
3. Applies body weight to the bends in the hose, while placing one knee directly upon one of the bends.
4. Has someone else replace the section with two sections of hose.
5. Slowly releases the pressure on the bend.

B. Using a hose clamp **2-17.33.2**

1. Applies a hose clamp approximately three (3) feet behind the couplings.
2. Replaces burst section of hose with two good sections of hose.
3. Releases the hose clamp.

XXXV. Demonstrate the use of hose appliances and tools on a pumper as required to be carried by NFPA1901, Standard for Pumper Fire Apparatus, Section 7-2. 2-7.34 (*3-3.3(b)*)

A. Use of appliances and tools

1. Appliance

a. Valve

1) Ball
2) Gate
3) Butterfly
4) Clapper

b. Wye
c. Siamese
d. Water thief
e. Hydrant valve
f. Fitting

1) Adapter
2) Reducer
3) Double

a) Male
b) Female

g. Strainer

2. Tools

a. Hoist
b. Jacket
c. Clamp
d. Spanner, hydrant wrench mallet
e. Bridge
f. Chaffing block
g. Strap, rope, drain

XXXVI: Demonstrate advancing uncharged attack lines of two different sizes (1½ inches or larger), from a pumper, given the necessary equipment and operating as a member of a team for the following evolutions: 2-7.35 (*3-3.9(b), 3-3.12(b)*)

A. Advance of uncharged hoselines

1. Into a structure **2-7.35.1**

a. Selects a hoseline, properly removes it from the apparatus and deploys it toward the entrance
b. The nozzle person and back up firefighters are on the same side of the hoseline
c. The nozzle person is at the nozzle and the officer or second firefighter is a few feet back; if available, the next firefighter is approximately at midpoint of the first section and the coupling
d. Feels the door for heat. This can give an indication of extreme heat buildup, signifying the potential for a backdraft or flashover.

CAUTION: An uncharged hoseline should never be advanced into a fire or through a door that is hot to touch. The line should be charged and the nozzle person should open the nozzle, bleed the air off, and select the proper pattern before entering the fire area.

e. Stays low and avoids blocking ventilation openings such as doorways or stairs.

2. Up a ladder to second floor landing **2-7.35.2**

    a. Selects a hoseline, properly removes it from the apparatus, and deploys it to the base of the ladder.
    b. If carrying a shoulder load, lays it at the left side of the ladder
    c. The nozzle person takes the nozzle and pulls it under the left armpit, across the chest and over the right shoulder, allowing the nozzle to rest in the small of the back
    d. The nozzle person, with both hands free, climbs the ladder to the second floor landing
    e. As the nozzle person steps off the ladder onto the building, the second firefighter drapes a large loop of hose over his/her shoulder and starts up the ladder to help advance the hose.
    f. The above process continues until an adequate amount of hose has been advanced

3. Up an inside stairway to an upper floor **2-7.35.3**

    a. Selects a hoseline, properly removes it from the apparatus, and deploys it to the base of the inside stairway.
    b. Advances up the stairway feeding the hose off of a shoulder carry (if used)
    c. Lays the hose on the stairs against the outside wall to avoid sharp kinks and bends
    d. *(OPTIONAL) If there is an open stairwell, the hoseline may be run up between the handrails. It should be done in a vertical manner and tied off with a hose tool or strap at the upper level near a coupling*
    e. Once the desired landing is reached, the excess hose can be flaked up the stairs toward the floor, above the fire and looped back down. *(Caution must be used when placing firefighters above the fire floor when hose line is uncharged.)*
    f. When the hoseline is in place, the nozzle person has the line charged, bleeds the nozzle, and prepares to advance the line.
    g. If possible, firefighters should be placed at every turn or point of resistance to assist in deployment.

4. Up an outside stairway to an upper floor **2-7.35.4**

   a. Selects a hoseline, properly removes it from the apparatus, and deploys it to the base of the outside stairway
   b. Advances up the stairway, feeding the hose off of a shoulder carry, if used
   c. Lays the hose on the stairs, avoiding sharp kinks and bends
   d. Once the desired landing is reached, the excess hose can be flaked up the stairs toward the floor above the fire and looped back down. (*Caution must be used when placing firefighters above the fire floor when hose line is uncharged.*)
   e. When the hoseline is in place, the nozzle person has the line charged, bleeds the nozzle, and prepares to advance the line.
   f. If possible, firefighter should be placed at every turn or point of resistance to assist in deployment.

5. Down an inside stairway to a lower floor **2-7.35.5**

(Caution: Recommended for use only when you know there is no fire present or you know the location of a very small fire.)

   a. Selects a hoseline, properly removes it from the apparatus, and deploys it to the base of the inside stairway.
   b. Advances down the stairway, feeding the hose off a shoulder carry (if needed)
   h. Lays the hose on the stairs against the outside wall to avoid sharp kinks and bends
   i. Have all available hose in place when reaching the fire floor
   j. When the hoseline is in place, the nozzle person has the line charged, bleeds the nozzle, and prepares to advance the line.
   k. If possible, firefighters should be placed at every turn or point of resistance to assist in deployment

6. Down an outside stairway to a lower floor **2-7.35.6**

(Caution: Recommended for use only when you know there is no fire present or you know the location of a very small fire.)

a. Selects hoseline, properly removes it from the apparatus , and deploys it to the outside staircase.
b. Advances down the stairway, feeding the hose off of a shoulder carry (if used)
c. Lays the hose on the stairs avoiding sharp kinks and bends
d. Has all available hose in place when reaching the fire floor
e. When the hoseline is in place, the nozzle person has the line charged, bleeds the nozzle, and prepares to advance the line.
f. If possible, firefighters should be placed at every turn or point of resistance to assist in deployment

7. To an upper floor by hoisting **2-7.35.7**

a. Selects a hoseline, properly removes it from the apparatus, and deploys it to the area it is to be hoisted.
b. Lowers a rope of appropriate length from the intended destination
c. If available, has a hose roller in place, over the windowsill or edge of wall, and properly secured.
d. Folds the nozzle end of the hoseline back over the rest of the hose until an overlap of four (4) to five (5) feet is formed
e. Ties a clove hitch, with an overhand safety knot, around the tip of the nozzle and the hose it is folded against, so that they are lashed together
f. Places a half hitch on the doubled hose about twelve (12) inches from the loop end
g. When the hoseline is in place, the nozzle person has the line charged, bleeds the nozzle, and prepares to advance the line.

XXXVII. Demonstrate advancing charged attack lines of two different sizes (1½ or larger), from a pumper, given the necessary equipment and operating as a member of a team for the following evolutions: 2-7.36 (*3-3.9(b), 3-3.12(b)*)

A. Advancement of charged hoselines

1. Into a structure **2-7.36.1**

   a. Selects a hoseline, properly removes it from the apparatus, and deploys it toward the entrance
   b. The nozzle person and back up firefighters are on the same side of the hoseline
   c. The nozzle person is at the nozzle and the officer or second firefighter is a few feet back; if available, the next firefighter is approximately at the midpoint of the first section and the coupling
   d. When the hoseline is in place, the nozzle person has the line charged, bleeds the nozzle and prepares to advance the line
   e. Feels the door for heat. This can give an indication of extreme heat buildup signifying the potential for a backdraft or flashover.
   f. If possible, firefighters should be placed at every turn or point of resistance to assist in deployment

2. Up a ladder to a second floor landing **2-7.36.2**

(Caution: Charged hoselines should only be advanced up a ladder when absolutely necessary.)

   a. The hoseline is brought to the base of the ladder where it is charged and the nozzle is bled
   b. The nozzle person and the firefighters space themselves on the ladder within reach of each other
   c. Each firefighter ties into the ladder with a leg lock or ladder belt
   d. Using both hands, the hoseline is pushed upward from firefighter to firefighter
   e. The nozzle person advances the line into the second floor landing
   f. The other firefighters continue to hoist additional hose as necessary

3. Up an inside stairway to an upper floor **2-7.36.3**

    a. Selects a hoseline, properly removes it from the apparatus, and deploys it to the base of the inside stairway
    b. When the hoseline is in place, the nozzle person has the line charged, bleeds the nozzle, and prepares to advance the line
    c. Advances the hose laying it on the stairs against the outside wall to avoid sharp kinks and bends
    d. If possible, firefighters should be placed at every turn or point of resistance to assist in deployment
    e. Once desired landing is reached, the excess hose can be advanced up the stairs toward the floor above the fire and looped back down
    f. Entry is then made into the fire floor of the fire area

4. Up an outside stairway to an upper floor **2-7.36.4**

    a. Selects a hoseline, properly removes it from the apparatus, and deploys it to the base of the inside stairway
    b. When the hoseline is in place, the nozzle person has the line charged, bleeds the nozzle, and prepares to advance the line
    c. Advances the hose laying it on the stairs avoiding sharp kinks or bends
    d. If possible, firefighters should be placed at every turn or point of resistance to assist in deployment
    e. Once desired landing is reached, the excess hose can be advanced up the stairs toward the floor above the fire and looped back down
    f. Entry is then made into the fire floor of the fire area

5. Down an inside stairway to a lower floor **2-7.36.5**

    a. Selects a hoseline, properly removes it from the apparatus and deploys it to the inside stairway
    b. When the hoseline is in place, the nozzle person has the line charged, bleeds the nozzle, and prepares to advance the line
    c. Advances the hose, laying it on the stairs against the outside wall to avoid sharp kinks and bends
    d. If possible, firefighters should be placed at every turn or point of resistance to assist in deployment
    e. Once the desired landing is reached, it is necessary to have all available hose on the fire floor

f. Entry is then quickly made in the fire floor or fire area
g. Expect to encounter heavy heat conditions while advancing lines down inside stairways

6. Down an outside stairway to a lower floor **2-7.36.6**

   a. Selects a hoseline, properly removes it from the apparatus, and deploys it to the outside stairway
   b. When the hoseline is in place, the nozzle person has the line charged, bleeds the nozzle, and prepares to advance the line
   c. Advances the hose laying it on the stairs avoiding sharp kinks and bends
   d. If possible, firefighters should be placed at every turn or point of resistance to assist in deployment
   e. Once the desired landing is reached, it is necessary to have all available hose on the fire floor
   f. Entry is then quickly made into the fire floor or fire area

7. To an upper floor by hoisting **2-7.36.7**

   a. Selects a hoseline, properly removes it from the apparatus, and deploys it to the area it is to be hoisted
   b. Lowers a rope of appropriate size from the intended destination of the hoseline
   c. When the hoseline is in place, the line is charged and the nozzle is bled
   d. Ties a clove hitch, with an overhand safety knot, around the hose about one (1) foot below the coupling and the nozzle
   e. Ties a half hitch through the nozzle handle and around the nozzle itself in a manner that allows the rope to hold the nozzle shut while it is being hoisted
   f. When the hoseline is in place, the nozzle person advances the line

XXXVIII. Demonstrate operation of a charged attack line (1½ inches of larger) from a ground ladder. 2-7.37 (*3-3.9(b)*)

(Caution: Operating a hoseline from a ground ladder requires the ladder to be securely tied in and heeled)

A. The hoseline is brought to the base of the ladder where the line is charged and the nozzle is bled.
B. The nozzle person and firefighters space themselves on the ladder within reach of each other
C. Each firefighter ties into the ladder with a leg lock or ladder belt

D. Using both hands, the hoseline is then pushed upward from firefighter to firefighter.
E. The nozzle person projects the nozzle through the ladder rungs allowing approximately one (1) foot to be extended beyond the rungs at the appropriate level, and secures the hose with a ladder belt or rope hose tool.
F. Secures the hose with a ladder belt or rope hose tool several rungs below the one the nozzle person is standing on
G. Once the hoseline, nozzle, and all firefighters are tied in and secured, the nozzle may be opened slowly

XXXIX Demonstrate carrying a 100-foot attack line (1½ inch or larger) into a building, connecting it to a standpipe, and advancing the line from the standpipe. 2-7-38 (*3-3.9(b), 3-3.12(b)*)

A. Carries the appropriate 100 feet of a minimum of 1½ inch hoseline to one floor below the fire floor
B. Detaches the building hoseline or removes the outlet cap
C. Checks the connection for adapters (if needed) and foreign objects in the discharge
D. Connects the fire department hose to the standpipe connection. It is a good practice to connect a gated wye to the connection before the attack line is connected
E. Advances the hoseline up to the fire floor; any extra hose could be flaked up the stairs toward the floor above the fire floor. *(Caution must be used when placing firefighters above the fire floor when hose line is uncharged)*
F. When firefighters are in position to effect the attack, the line is charged and the nozzle is bled
G. Checks the door with the back of an ungloved hand. If appropriate, opens the door slowly and advances the line toward the fire.

XXXX: Demonstrate the proper procedure for making hydrant connections with the following type intake hose: 2-7.39 (3-3.14(b)

A. 3 inch or smaller intake line **2-7.39.1**

1. Removes intake hose(s), hydrant wrench and other required tools from the pumper.
2. Unrolls the hose
3. Connects the hose(s) to the pumper.
4. Places the hydrant wrench on the hydrant valve stem operating nut with the handle pointing away from the outlets.

5. Removes the appropriate cap(s).
6. Fully opens and closes the hydrant to make sure there is water and nothing is blocking the discharge(s).
7. Connects the hose(s) to the hydrant, using any adapters necessary.
8. Fully opens the hydrant.
9. Tightens any connection(s) that leak.

B. 4½ inch or larger soft sleeve. **2-7.39.2**

1. Removes intake hose, hydrant wrench and other required tools from the pumper.
2. Unrolls the hose
3. Connects the hose to the pumper.
4. Places the hydrant wrench on the hydrant valve stem operating nut with the handle pointing away from the outlet.
5. Removes the appropriate cap.
6. Opens and closes the hydrant to make sure there is water and nothing is blocking the discharge.
7. Connects the hose to the hydrant, using any adapters that may be necessary.
8. Fully opens the hydrant.
9. Tightens any connection(s) that leak.

C 4½ inch or larger hard intake line **2-7.39.3**

1. Firefighter #1

    a. Checks to see booster tank valve is closed.
    b. Removes the pump intake cap.
    c. Assists with the removal of the hard suction from the pumper.
    d. Assists with the connection of the hard suction to the pumper.
    e. Assists with the connection of the hard suction to the hydrant.
    f. Fully opens the hydrant.
    g. Tightens any connections that are leaking.

Note: Steps f and g can be reversed depending on local policy.

2. Firefighter #2

    a. Removes the hydrant wrench and adapter (if necessary) from the pumper.
    b. Removes the hydrant outlet cap.
    c. Places the hydrant wrench on the hydrant valve stem operating nut with the handle pointing away from the outlet.
    d. Opens and closes the hydrant to make sure there is water and nothing is blocking the discharge.
    e. Places the adapter on the 4½inch outlet, if necessary.
    f. Assists with the removal of the hard suction from the pumper.
    g. Assists with the connection of the hard suction to the pumper.
    h. Assists with the connection of the hard suction to the hydrant.

Note: Steps g and h can be reversed depending on local policy.

XXXXI: Demonstrate a hand lay of 300 feet of supply line (2½ inch or larger) from a pumper to a water source. 2-7.40 (*3-3.14(b*))

A Hoseline drag

1. Stands alongside the hose line and pick up the nozzle or coupling.
2. Places the hose line over your shoulder with the coupling (nozzle) in front resting on the chest.
3. Holds the coupling in place while pulling with the shoulder.

B. Shoulder loads

1. Load

    a. Stands with back to engine
    b. Second firefighter stacks hose back and forth on shoulder with loops at waist length.
    c. Maximum 100 foot per firefighter
    d. Moves forward 15 feet

2. Unload

    a. First to get loaded is last to unload
    b. All walk toward objective
    c. Firefighter closest to hose bed (last to get unloaded) begins to flake out hose
    d. Once out of hose, next firefighter starts to drop
    e. Repeats until at objective or run out of hose

XXXXII: Demonstrate the procedure for cleaning and maintaining fire hose. 2-7.41 (*3-5.4(b)*)

A. Washing hose

1. Lays the section of hose out straight.
2. Uses a broom or brush to remove dust and dirt
3. Washes and scrubs with clear water.
4. If all spots have not been removed, scrubs with mild soap or detergent.
5. Rinses properly and completely.
6. Dries hose if required:

    a. Hose tower
    b. Places on an inclined rack
    c. Places in a cabinet-type hose dryer

XXXXIII: Demonstrate the procedure for cleaning and maintaining couplings. 2-7.42 (*3-5.4(b)*)

A. Cleans threads to remove tar, dirt, gravel and oil.
B. Removes gasket and twists the female swivel in warm, soapy water.
C. Replaces gasket:

1. Holds the gasket between your middle finger and thumb with his/her index finger resting on the outside of the gasket.
2. Folds the outer rim of the gasket upward by pulling with his/her index finger.
3. Places the gasket into the swivel by permitting the large loop of the gasket to enter the coupling swivel at the place provided for the gasket.
4. Allows the small loop to fall into place by releasing his/her grip on the gasket.

XXXXIV: Demonstrate the procedures for inspecting couplings for damage.2-7.43 (*3-5.4(b)*)

A. Male

1. Checks threads for damage or debris
2. Files threads to remove burrs

B. Female

1. Turns swivel
2. Checks threads for damage or debris